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LETTER DISCUSSING DESIGN WORK FOR REMEDIATION OF SEPTIC FIELD AT  
BUILDING 566 NWS EARLE NJ  
6/2/1995  
HALLIBURTON NUS



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June 2, 1995

Project Number 5085

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Reference: CLEAN Contract No. N62472-90-D-1298  
Contract Task Order (CTO) No. 206

Subject: Building 566 Septic Field - Remediation (Revised)  
Naval Weapons Station Earle  
Colts Neck, New Jersey

Dear Brian:

This letter is to bring you up to date with respect to the design work for remediation of the septic field at Building 566, Earle NWS under CTO 206, and to alert you to conditions which affect this work.

Mr. John R. Gee, P.E., design engineer for this project, assisted with the brief investigation and sampling of the septic tank area on May 2 and 3, 1995. Mr. Gee also discussed the recent installation of two new fuel oil tanks adjacent to and upgradient of the septic field with the installation contractor, Central Pump & Tank Service Corporation (CPTSC). Based on our evaluation of those observations and discussions, we do not believe the planned remediation, i.e. excavation and backfilling, is feasible in light of existing site conditions. The physical conditions in the septic field area indicate that extraordinary measures would have to be taken to accomplish the excavation successfully and without further impact to the environment.

Our observations are as follows:

1. Wetlands are located immediately downgradient of the septic field area.
2. Visible staining was observed at the surface around five or six of the boreholes made prior to the May 2-3 visit (an indication of a discharge out of the boreholes).
3. The groundwater table within the septic field is approximately 0 to 1.5 feet below ground surface (BGS). This high groundwater means:
  - There is very little vadose zone soil present to excavate. We cannot recommend excavation below the water table as a remedial technique.



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- Sheeting, shoring, and pumping and treatment of groundwater will be required to excavate the area. Also, due to the existing slope and site conditions, without special measures the ground surface may not be able to support the heavy excavation equipment needed to conduct the work.
  - As with the boreholes already completed, removal of soil could release contaminated groundwater to the surface. This discharge would flow toward the wetlands. At present the contamination appears to be only seeping to the wetlands.
  - While taking a TCLP sample in the seep area with a spade, the hole filled with a green liquid to within 8 inches of the ground surface. A sample was taken for laboratory analysis.
4. CPTSC, the contractor who installed the new tanks upgradient and adjacent to the tile field, indicated there was a significant leak in the fire water line serving Building 566. This leak has apparently contributed to high groundwater levels in the area. Shut off of that line reportedly dropped the water level a couple of feet. (See Item 8). If a fire water line leak is present, it should be identified and corrected before further work is carried out in the septic field area.
  5. During our May 2 and 3, 1995 investigation, clear water was observed discharging from the septic tank manholes onto the ground surface. The source of the water is unknown but may be a roof drain, the leak from the fire water line, or another source. If it is still connected to the septic field, the septic tank may be surcharging and creating the high groundwater conditions observed. The tank should be pumped out, decontaminated and taken out of service (hydraulically disconnected) from the septic field before any remediation. It may also be necessary to vacuum out the piping from the septic tank to the field if the piping is holding any liquids.
  6. The area contains clay and poorly graded sand. A clay layer apparently is present at approximately 3 to 4 feet BGS in the septic field area indicating that the high groundwater conditions may be natural. Clay and sandy soils are also present at ground surface. If natural, the area may not be suitable for installation of a new tile field. An investigation to confirm the subsurface lithology should be conducted prior to the remedial design of the septic field.
  7. Portions of the parking area for Building 566 drain directly to the septic field area. Diversion of this runoff may be advisable or necessary to remediate the septic field, particularly if it is a contributing factor to the groundwater level.
  8. As mentioned above, the new tanks were installed just upgradient and adjacent to the tile field. CPTSC indicated that the tanks were installed only partially below ground since excavation deeper than five feet was not possible, even with the fire water line shut off. (Shutting off the fire water line allowed the tanks to be placed at their present depth. See Item 4). As a result, an embankment was constructed around the tanks which in part overlaps the septic field. Excavation of the septic field will require disturbance of the embankment. Any resultant impact to the tanks due to the septic field remediation will have to be ascertained as part of the remediation design.



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9. Concrete anchors were installed to ensure that the new tanks would remain stable during high groundwater conditions. In addition to the effects of displacing the embankment and avoiding damage to the tanks themselves, the disposition of the anchor systems will need to be considered.
10. The contractor reported off-site disposal of approximately 800 tons of soil that did not pass TCLP testing and was disposed of as hazardous waste. The soil and groundwater reportedly contained volatile organics. Significant organic odors were noticed by CPTSC during the installation of the new tanks.

In short, sufficient data is not available to complete a remedial design for the septic field at Building 566. We have stopped work on the excavation design under CTO 206 and await further direction. The following is recommended.

Under CTO 226, a Phase I investigation is planned for the UST 566/1 and 566/2 sites. These are the sites in which the new tanks discussed above are located. The Phase I investigation is to be done in accordance with NJDEP regulations which, among other things, require the determination of the full vertical and horizontal extent of groundwater contamination at any UST site where a release has occurred. From the information and observations made, we know a release has occurred. Therefore, a logical plan might be to postpone the design for the septic field remediation, and expand the 566/1 and 566/2 UST site investigation under CTO 226 to obtain the data needed to do the remedial design for both the septic field and the tank sites.

We would be glad to discuss this matter with you. Please contact the undersigned and we will set up a meeting or teleconference at your convenience.

Very truly yours,

*Michael A. Turco*

Michael A. Turco, P.E.  
Deputy Program Manager

MAT/vmc

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